Natural Reproduction of Ponderosa Pine

Subproject - Special Seed Tree Study.

Purpose: To measure the 1934 cone crop and the number and distribution of 1935 seedlings produced by isolated seed trees of various sizes and classes.

Scope: The proposed short-time study is a minor phase of the general study of ponderosa pine seed production. Taken alone it can not give full **pr** final answers to all the questions involved, but may give some immediate results on effective seeding capacity of certain types of trees, and will materially supplement the data obtained in more extensive and continued observations later.

The study proposes using 1935 seedlings as a measure of relative seed production and particularly range of seed distribution from selected trees. It is recognized that because of the number of factors affecting reproduction this may not be a true index, but the relatively good seedling crop of 1935 may not be equalled for several years, so it is believed that a limited amount of work on this basis is justified.

Procedure:

- 1. In the Pine Creek and Thorn Creek selectively cut areas, select trees that are of potential seed-bearing size&which are isolated from other seed-bearers (over 200? feet distant). Attempt to obtain a wide range of sizes, tree classes, and crown sizes.
 - 2. For each tree chosen for study, record:
 - (1) D.B.H.
 - (2) Total Height.
 - (3) Dunning tree class.
 - (4) Economic tree class.
 - (5) Crown length.
 - (6) Crown width.
 - (7) Crown density.
 - (8) Number 1934 cones (on ground or tree).
- 3. The seeding area under and near the tree (about 1 chain radius) will be described under the following headings:
 - (1) Aspect nearest octant.
 - (2) Slope nearest 5 or 10%.
 - (3) Undergrowth
 - 0. Little or none (density less than 5%)
 - 1. Brush
 - 2. Reproduction seedlings or saplings.
 - 3. In poles.
 - (4) Ground cover
 - O. Little or none (density less than 5%)
 - 1. Grass
 - 2. Weeds.

(b) Soil

- 1. Gravelly sandy loam
- 2. Sandy loam
- 3. Loam.

4. Seedlings will be noted on a diagrammatic sketch and tally form to show approximate direction and distance from tree. The exact distance need not be measured but each seedling should be plotted or tallated within its proper "zone", as defined by units of 20 links radial distance from the tree.

An attempt will be made to find and record all seedlings within 60 (?) links radius of the tree. Beyond that a temporary transect will be run out in each cardinal direction for 3 chains (father if seedlings are still found at that distance). The transect will be 10 links wide (5 links on each side of center line), and seedlings will be tallied by 20-link units of distance from the tree.

On the Thorn Creek area it may be desirable to note all subsequent seedlings (1930 or later), distinguishing them from 1-year olds by symbol.

An arrow on the sketch will indicate direction of slope.

5. If a map of the general area is available (as on Pine Creek), note the approximate tree locations on same, estimating distances and directions from map features.

6. Photographs of typical seed trees should be taken.

As this part of the reproduction study will not attempt to yield detailed data on location of seedlings with respect to cover, soil, etc., these items wixx need be noted in only a general way as a possible aid in explaining the lack or abundance of seedlings where seed trees are otherwise comparable. It would be desirable to eliminate these variables, but as this is impossible, the aim will be to make them as uniform as possible. Hence places with very dense brush or grass cover, very thin soil, stream bottoms, etc. should be avoided.

Time and Personnel: The study should be made as soon as possible, before too many 1935 seedlings have died. (Germination for this year is doubtless now complete.) The time of two men for about one week may be devoted to the field work. Tentatively the period July 11-16 is set up for the job.

Compilation and Report: Compilation will consist of a relatively simple summary of recorded data, with appropriate tabular or graphical comparisons. A brief report will be prepared as soon as time permits, not later than winter of 1935-6. The results will form a part of the larger reproduction study, a comprehensive report on which may not be made for several years.

INDIVIDUAL TREE GROWTH STUDY FOREST Elk Cr. Burn NAME TYPE PROMISS MAIN DATE 7/29/85 SITE _____ SECTION___TWP. SPECIES ____ RANGE ___ SCALE __FT. = I" No 3 -dead-NORTH 1934 Fire SOUTH RELEASE DATA DATA ON TREE STUDIED 5 YR. PERIODS RADIUS D.B.H. 36 2 ND. 1ST CUTTING ___ AFTER CUTTING 1ST TOTAL HEIGHT _______ CROWN CLASS 3 25 495 SND YEAR AREA CUT_____ 3 RD D.B.H. BEFORE RELEASE 4 TH TOTAL AGE 4'5% SHOTTOURTS 5 TH 6TH RINGS LAST INCH NOW ______ stump in the circle should be showed by a 7 TH WIDTH OF BARK BTH SLOPE S Wolf @ Yas abasts nego ni "! 9 TH 10 TH EXPOSURE & Ridge-for OVER FORM D-4-1

INDIVIDUAL			ROWT	HST	UDY
FOREST Elk Cr. Burn		NAME	24777	rysy	
TYPE PPAMER	BTUMP	DATE	7/29	7/35	TREE OR
SITE		SECTIO	TNC	WP.	
SPECIES PO-DF					
-/-				No 2	
	NO	RTH		NO Z	
			1		
3		1	W II	2	
		1	1	1	14
		1 7	1		1
		-		1	1
		2 13		1	1 15v
	W	-	30/	1	
	/			1 3 3	
10		Name of	D.O.D		
			1:00		
	-	-	(a).		
	342	0	-/		
	40.00	2			/
		-			1 44
				/	
6				/	33+1
					19+3
		de la			
DATA ON TREE STUDIES	SO	UTH	RELE	ASE DA	TA
2211			5 YR.PER BEFORE C	IODS RAI	DIUS DIUS INCHES
D.B.H. 32"		_	2 ND.	- 070	O T I T INCHES
TOTAL HEIGHT		-	1 ST CUTTING AFTER CU	TTING	
CROWN CLASS 3 90%	75'	-	1ST		
YEAR AREA CUT			2 ND 3 RD		
D.B.H. BEFORE RELEASE	Pol pidasa	showing a	4TH	umber of a	M.o.
TOTAL AGE 190			5 TH		
RINGS LAST INCH NOW			6.TH		
rele should be shown by a	in the ci	stump	7 TH	delideren	dom ko
WIDTH OF BARK		use a se	8 TH	namber	bus top
SLOPE SE W 30 Stone abnes	in open s	(40'= 1 <u>"</u>	9 TH 8		and stur
EXPOSURE W	000,1-62-61	OCDEN 7	10 TH	tands.	dense s
	OVER			FOR	M D-4-1

INDIVIDUAL	TRE	EGG	ROW	TH-ST	UDY
FOREST Elk CAMBULA		NAME		The same of the sa	
TYPE MANNER	STUMP	DATE	7/29	135	TREE OR
SITE					***************************************
				T W P	
SPECIES P	-	RANGE		SCALE _	FT = 1"
	NO	RTH		No 1- alive	
				arrye	
					20
	1		15	1	
//		0	1	- 1	1
///				1	1
	/	1		10	
		1	-]	1	
	1.		1-		1 0 1 ×
	- 0	-			9 28
	1:	0			
W. 10			/		
	*		/	1.	1
		0:1	/		
			and the		/
4					
		-		/	
			CONTRACTOR OF THE PARTY OF THE		
ATA ON TREE STUDIED	so so	UTH		EASE D	
.в.н. <u>38</u> ″			THE RESERVE THE PARTY OF THE PARTY.	RIODS RA	ROWTH INCHES
OTAL HEIGHT///			2 ND.		
			AFTER C	UTTING	
ROWN CLASS 5 20	X 80 N		1ST 2ND	-	
EAR AREA GUT 5	-		3 RD	-12-	3/60
B.H. BEFORE RELEASE_	Graphic D	showing	4 TH	responds t	Cor
OTAL AGE 280 8	CTIONS	NSTRU	5 TH		
INGS LAST INCH NOW	EL B FUO	a plot ar	6 TH	tox also	au Tiu
IDTH OF BARK	in the c	stump	7 TH	edeilderee	done le
LOPE 40 BARK		use as	8 TH	number.	bus tob
	mado ut	_1 - 0+1	9 TH		and stun dense st
XPOSURE SW			10 TH	SELECTE	ne psrian

OVER

FORM D-4-1

EXPOSURE 5W

ASSOCIATION AND RELEASE

TREE OR	Т	TREES		STUMP		
STUMP NO,0	SP CIES	D. B. H.	TOTAL	DIAM.	REMARKS 39YT	
	TWP,	N	SECTIO		SITE	
71 = 37	23438		30NAR-		8986186	
	-6266	E 83%	нтя	эи		
	C. P. A.				-	
ana d. No	5	E	N	_W		
	0 5	O SE	E	· Plat	-	
2/	0 8	6 35	OSE	o Św	-	
3	0/5	OF	0 SE	0 5K		
19	0/ 3	6 E	0 SE	0 5W	1 1	
15	0 5W	(O. E	6 SE	0 gw		
6	o sw	OE	OE	0 5		
7	0 5W	OE	OE	0/5		
18	0 5	A E	0 E	0 3		
9	2 5	OE	0 =	0 8	Draw Blifon	
10	0 3	OE	OE	(:) SE		
	1					
	,	7				
A	EASE DA	REL	HTU	so	DATA ON TREE STUDIED	
SUHTW	345 34015 585 34015	BRANTE		,	о.в.к.	
		1 ST			TOTAL HEIGHT	
	BRITTU	S BETER		- 21	CROWN CLASS 2 88	
		2 ND				

[°]Number of tree or stump

FORM D-4-1

Corresponds to number showing graphic location plot on opposite of sheet.

INSTRUCTIONS

The circle represents a plot around the tree studied. The location of each established tree or stump in the circle should be shown by a dot and number. Do not use a separate series of numbers for trees and stumps. Use a scale of 40'= 1" in open stands and as low as 10'=1" dense stands.

ASSOCIATION AND RELEASE

SP CIES D. B. H. TOTAL HEIGHT DIAM. SP CIES D. B. H. TOTAL HEIGHT DIAM. STUMP DIA		Т	REES	3 MALE	77117714747	1
A TAGE STUDIES SECTION NAME	TREE OR	7 10 1 20	1000	TOTAL	STUMP DIAM.	REMARKS 39YT
SEN W W W W W W W W W W W W W W W W W W W	NO,0	SP CIES	D. B. H.	HEIGHT		7 7017
SE ON WE SE ON SW SE ON SW SE ON SW SE ON SW		TWP	N10	SECTIO		SITE
S E W W O W O W O W O W O W O W O W O W O						
S E W W O W O W O W O W O W O W O W O W O	*1 = 3 =	SCALE -		30MAR-		2210322
S E W W O W O W O W O W O W O W O W O W O						
W SE SW W SW S				HTR	ON.	
W SE SW W SW S		5	E	N	W	
A TAO BEAS SH TO SE SW SW SW SW SE SW						
SE SW SW SE SW SW SW SE SW	1	Aspect	E. M	- W		8 '8
SE SW	-	0.	P-7	0		
D.B.H. T.E. OCROWN CEASS COROWN CEASS COROWN CEASS COROWN CEASS CROWN CEASS CROWN CEASS OW WE WAND WASS OW WE WA	2	/ W	TO FOR	W	W H	
J SE W W SE SW				0		
DATA ON TREE STUDIES SCUTH RESEASE OF THE PARTY OF THE PA	3	· will		W	W	
SW SE SW SW SE SW		2.20" PP.JOW		-		1
SI O SE SW SW SW SE SA SW	91		SE	~ 11	W	. \ \
DATA ON TREE STUDIES SCUTH RESEASE DATA DATA ON TREE STUDIES SCUTH DATA ON TREE STUDIES SCUTH DATA ON TREE STUDIES SCUTH COTTING CROWN GEASS C	1	1	:/	**	0	1 1
DATA ON TREE STUDIES SOUTH RESEASE DATA D.B.H. 15 TOTAL HEIGHT CROWN GEASS CORN OF WAR 157 OF WAR	5	0/	1.SE	- SW		+ + +
DATA ON TREE STUDIES SOUTH RELEASE DATA D.B.H. J. BEFORE OUT ORGUTHMEN TOTAL HEIGHT CROWN GEASS	1			9		
DATA ON TREE STUDIES SOUTH RELEASE DATA OATA ON TREE STUDIES SOUTH RELEASE DATA OBH. 16 OBH. 16 COUTH WAS CROWN CLASS CAR OF THE STUDIES CROWN CLASS CAR	4		SE	SW		
DATA ON TREE STUDIES SOUTH RELEASE DATA OBJECTIVE STUDIES SOUTH RELEASE DATA OBJECTIVE STUDIES SOUTH SET		6	O F	7		
DATA ON TREE STUDIES SOUTH RELEASE DATA ONTHE STUDIES SOUTH RELEASE DATA COUTTING COUTT	-	NW		11	- 24	
DATA ON TREE STUDIES SOUTH RELEASE DATA D.B.H. 16 TOTAL HEIGHT CROWN CLASS CROWN CLASS CROWN CLASS		n n	, =	C PER	* du	
DATA ON TREE STUDIES SOUTH RELEASE DATA D.B.H. 12 D.B.H. 14 TOTAL HEIGHT ASS CROWN CLASS AND STREET LYTING	4	0		2 3	- / "	
DATA ON TREE STUDIES SOUTH RELEASE DATA D.B.H. 16 TOTAL HEIGHT CONTRIBUTION CROWN CLASS & MARKET CONTRIBUTION CONTRIB	9	0	1 SE		SW	
DATA ON TREE STUDIES SOUTH RELEASE DATA D.B.H. 12 D.B.H. 12 TOTAL HEIGHT ASS CROWN CLASS & MA.	1		23.0	0	braw	p6+
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C	10	_	3 6		_	/ / /
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C	1					
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C		1				
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C	-					/ 1
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C						
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C		TA.				
D.B.H. 12 BEFORE CUT GROWTH-WAR TOTAL HEIGHT COUNTY CROWN CEASS FOR CUTTING COUNTY CONTY CONTY CEASS FOR COUNTY CONTY CEASS FOR COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY COUNTY CEASURE COUNTY CEASURE COUNTY COUNTY C						
TOTAL HEIGHT CUTTING CROWN CLASS TO STATE OF THE	AT	EASE DAT	REL	HTU	02	DATA ON TREE STUDIES
TOTAL HEIGHT CUTTING CROWN CLASS TO STATE OF THE	10.8	DAN BOOK	30019	1000		
CROWN CLASS & PAA 18T		DHS TUS	2110138		2000	0.8.H. 18
CROWN CLASS & PAA 18T			721			Sol wasan need
			CUTTIN	-		TOTAL HEIGHT
			TST			CROWN CLASS & PA
THE AREA DISK				1		
					-	THE AREA DISK

ONumber of tree or stump

Corresponds to number showing graphic location plot on opposite of sheet.

INSTRUCTIONS

The circle represents a plot around the tree studied. The location of each established tree or stump in the circle should be shown by a dot and number. Do not use a separate, series of numbers for trees and stumps. Use a scale of 40'=1" in open stands and as low as 10'=1"dense stands.

OGDEN-7-12-28-1,000

ASSOCIATION AND RELEASE

TR	EE OR	TREES			STUMP	
ST	TUMP NO,0	SP CIES	D. B. H.	TOTAL HEIGHT	DIAM.	REMARKS
1		-	NO.	SECTU		SITE
	1	TWP.	VIV	NI DIE		
* 1	= 377	SUADO:		BOMAR -		Qual 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	N	5	F	W		Quadrats begin at tree
	0	* *		BTRI	ри	
_						
	0	11			La Contraction	
_	0	0/	D			
_	,	1		0		
1	0/	0	/			1
and the same	1	.0/	0 201/00	0		1 1 300
- 14" PR30 H	D	1	Top spur			
6	0	9	ME Aspect	0		
7		0	/	1	1	
7 1	0		-	6	- /	
8	0	.0.	0	0.		
45		0		0	. /	
1	'	0			-	
10 18	EP	10	9	0		
-301		1	1			
	-	-				
A.	1	/				
						/ / 3
-		1				
10,30	6/2				W (4	
			-			
-	AT	EASE DA	REL	HTU	0.00	DATA ON TREE STUDIED
F-	- Suu	348 39918	300158	1		1000
BOHOM!	HTW	כעד פתם	BEFORE	200		D.B.H. 22
		WC	TST			TOTAL HEIGHT
1		Битти	AFTER		A 1875 9	CROWN CLASS 5
			DMS			543
					1	THE ATEN MADE

°Number of tree or stump

Corresponds to number showing graphic location plot on opposite of sheet.

INSTRUCTIONS

The circle represents a plot around the tree studied. The location of each established tree or stump in the circle should be shown by a dot and number. Do not use a separate, series of numbers for trees and stumps. Use a scale of 40'=1" in open stands and as low as 10'=1" dense stands.

OGDEN-7-12-28-1,000

OGDEN-7-12-28-1,000

FORM D-4-1

FORM D-A-1